

original

BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:)
)
REVISIONS TO WATER QUALITY)
STANDARDS FOR TOTAL DISSOLVED) R06 - _____
SOLIDS IN THE LOWER DES PLAINES RIVER;) (Site Specific Rule - Water)
EXXONMOBIL OIL CORPORATION, PETITIONER)

NOTICE OF FILING

To: Dorothy Gunn
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Please take notice that on February 7, 2006, we filed with the Office of the Clerk of the Illinois Pollution Control Board an original and ten copies of the attached Petition for a Site Specific Rule Change, a copy of which is served upon you.

EXXONMOBIL OIL CORPORATION

By: 
One of its Attorneys

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RECEIVED
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FEB 09 2006

Environmental Protection
Agency

THIS FILING IS BEING SUBMITTED ON RECYCLED PAPER

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PETITION FOR A SITE SPECIFIC RULE CHANGE

ExxonMobil Oil Corporation ("ExxonMobil" or "Petitioner") petitions the Illinois Pollution Control Board ("Board") for a site specific rule applicable to its Joliet Refinery. This rule change would authorize discharges of Total Dissolved Solids ("TDS") from the refinery during the months of November until April on terms and conditions outlined herein. Petitioner is the owner and operator of a refinery located in Will County, as described below. Petitioner has entered into a Consent Decree with the United States Environmental Protection Agency ("U.S. EPA") and the States of Illinois, Louisiana and Montana to resolve certain alleged air quality violations at certain refineries.¹ The resolution for these claimed violations requires reduction of air emissions at the Joliet Refinery. This process will contribute to the wastewater treatment system additional levels of dissolved solids and sulfates. To comply with the Consent Decree, Petitioner must construct certain equipment and obtain air and water construction and operating permits from the Illinois Environmental Protection Agency (the "Agency"). The Agency has advised Petitioner that, due to occasional observed violations for TDS in the Des Plaines River and in light of the requirements of 35 Ill. Admin. Code § 302.102(b)(9), it cannot allow a mixing zone and hence could not issue the wastewater construction permit needed by Petitioner. For the

¹ A copy of the Consent Decree is Exhibit 1 hereto and is submitted separately.

reasons stated below, Petitioner therefore requests a site specific rule change during those months with the potential for elevated TDS due to snow melt run-off, with respect to the application of 35 Ill. Admin. Code §§ 302.208(g) and 302.407 regarding TDS. Petitioner thus requests that it not be held responsible for other sources not achieving those TDS water quality standards. This Petition for a Site Specific Rule ("Petition") is brought pursuant to Sections 27 and 28 of the Act, 415 ILCS 5/35, and Part 102 of Chapter 35 of the Illinois Administrative Code, 35 Ill. Admin. Code § 102.100 et seq. In support of this Petition, ExxonMobil states as follows:

STATEMENT OF REASONS

1. Petitioner has discussed the relief sought here with the Agency over the past several months. Petitioner has shared information relating to the technological feasibility and economic reasonableness [or lack thereof] in meeting the TDS standard in the receiving stream. The Agency has also shared with Petitioner publicly available information concerning potential revisions to the TDS standards in General Use waters. The Agency believes, based on guidance from U.S. EPA, that this petition is federally approvable. (See Exhibit 2). The Agency and Petitioner are filing contemporaneously with the filing of this Petition a Joint Motion that the Board immediately proceed to First Notice on this Petition. The Agency has advised Petitioner that it believes that a site specific rule change is the appropriate procedure, rather than an adjusted standard proceeding. Petitioner understands that the Agency is supportive of the relief herein requested and agrees with Petitioner that the relief needs to be obtained expeditiously in order for Petitioner to meet the schedule required by the Consent Decree. While the Agency is not a joint petitioner in this matter, Petitioner and the Agency agree that this relief is appropriate and ask the Board to take appropriate measures to expedite the consideration of this Petition.

The Petitioner further expects that one or more Agency representatives will be present at the hearing herein to testify in support of this requested relief.

2. Based on the suggestions we have received from the Agency, Petitioner proposes the following section be adopted by the Board:

Section 303.445 Total Dissolved Solids Water Quality Standard for the Lower Des Plaines River.

Beginning November 1 and continuing through April 30 of each year, the TDS water quality standard for Secondary Contact and Indigenous Aquatic life Use waters in Section 302.407 of this Part does not apply to the portion of the Des Plaines River from the ExxonMobil refinery wastewater treatment plant discharge point located at I-55 and Arsenal Road (said point being located in Will County, T34N, R9E, S15, Latitude: 41° 25' North, Longitude: 88° 11' 20" West) and continuing to the Interstate 55 bridge. TDS levels in such waters must instead meet a water quality standard for TDS (STORET Number 70300) of 1,686 mg/L.

Beginning November 1 and continuing through April 30 of each year, the TDS water quality standard for General Use waters in Section 302.208 of this Part does not apply to the Des Plaines River from the Interstate 55 bridge to the confluence of the Des Plaines River with the Kankakee River. TDS levels in such waters must instead meet a water quality standard for TDS (STORET Number 70300) of 1,686 mg/L.

3. The requirements of the existing water quality standards are neither technically feasible nor economically reasonable as applied to the refinery and the construction project required by the Consent Decree. Snow-melt conditions and the resulting run-off of dissolved solids is believed responsible for the monitored exceedances observed in the Des Plaines River; therefore, the request here is seasonal in nature. Due to the limited space available at the refinery, temporary storage is not a feasible option. Other equipment or measures are not feasible, and all of the technical options are not economically reasonable. At the same time, the numerical standard for TDS appears unduly restrictive. The Board adopted these TDS standards

based on the assumption that both chlorides and sulfates would be present at maximum levels; but that is not the case in this stretch of the Des Plaines River. Moreover, the Agency has developed substantial information showing that the sulfate water quality standard should be much higher -- roughly at or above the TDS levels proposed herein for the winter months.

4. This Petition seeks relief from the water quality standards for total dissolved solids contained in 35 Ill. Admin. Code §§ 302.208(g) and 302.407. These TDS standards have been in effect since March 1972. The following paragraphs and exhibits address the remaining requirements of 35 Ill. Admin. Code § 102.210 with respect to site specific rule changes. Based on information provided by the Agency, the only other dischargers to this segment of the Des Plaines River are not believed to have any substantial discharge of dissolved solids, and hence are not affected by this request.

GENERAL REFINERY INFORMATION

5. The ExxonMobil Joliet Refinery is located in Channahon Township on a 1,300-acre tract of land in unincorporated Will County, Illinois. The site is adjacent to Interstate 55 at the Arsenal Road exit, approximately 50 miles southwest of Chicago. To the immediate north of the refinery is the Des Plaines River, while east and south is the former Joliet Army Arsenal, which is currently being redeveloped as an industrial complex and the Midewin National Tallgrass Prairie.

6. The Joliet Refinery employs more than 500 full-time ExxonMobil employees to manage, provide engineering for, and operate and maintain the plant. The refinery operates 24-hours-a-day every day. Approximately 100 additional ExxonMobil employees who provide regional support services are located at the refinery. Approximately 150 full-time contractor employees provide a variety of maintenance functions at the refinery on a continual basis.

Construction projects and intensive maintenance periods called turnarounds can swell the contractor workforce by thousands during the year.

7. The refinery was built by ExxonMobil and began operating in 1972. It was one of the last grassroots refineries built in the United States. The refinery has a crude oil processing capability of approximately 240,000 barrels per day, or nearly 10.1 million gallons a day. The single-train, high-conversion refinery produces approximately 9 million gallons a day of gasoline and diesel fuel. Other products include: liquefied petroleum gas ("LPG"), propylene, asphalt, sulfur and petroleum coke.

8. The Joliet Refinery is the first major refinery in the nation to be admitted into the STAR Program of the U.S. Occupational Safety and Health Administration ("OSHA"), a voluntary employee safety program that challenges industry to meet and even exceed the most stringent government safety standards. The refinery was recertified as a STAR worksite in 1994, 1999 and 2002, with another rigorous OSHA review to be conducted in 2005.

9. The refinery draws from and discharges to the Des Plaines River, approximately 1,000 feet east of the I-55 Bridge. The refinery takes approximately 10.2 million gallons of water daily from the River, and 2 million gallons per day from wells, and discharges approximately 12.3 million gallons to the River. [On average, stormwater quantities more than offset the amount of water evaporated in the refinery]. The wastewater effluent contains dissolved solids derived from compounds present in crude oil that are removed from the crude by various refinery operations, as well as concentrating the TDS present in the intake water from the River from the evaporation cooling.

10. On October 11, 2005, a Consent Decree between ExxonMobil Oil Corporation, the parent company of petitioner, and the United States, and the States of Illinois, Louisiana, and

Montana, was lodged with the United States District Court for the Northern District of Illinois. Under that document, Petitioner is committed, *inter alia*, to making substantial investments in emission reductions at the Joliet Refinery. Without admitting any violation of federal or state law, Petitioner will be reducing at the Joliet Refinery [a] the emissions of sulfur dioxide by over 95%, or over 24,000 tons per year or 130,000 pounds per day, and [b] the emissions of nitrous oxides by approximately 50%, or over 1,800 tons per year or 9,800 pounds per day. The Consent Decree was subject to a 30-day period for public comment and was entered by the Court on December 13, 2005. (See Exhibit 1).

11. The Consent Decree calls for the use of a Wet Gas Scrubber [WGS]. In addition, and to mitigate the amount of sulfates and dissolved solids to be discharged, the Joliet Refinery will use an added technology: Catalytic SO₂ Additive Technology (DESOX). Exhibit 3 to this Petition contains a summary description of these measures. Both are necessary to meet the requirement of the Consent Decree. The WGS will create additional sulfate and total dissolved solids (TDS), the latter of which is the subject of this Petition.²

12. The Board adopted the regulation now appearing in 35 Ill. Admin. Code § 302.208(g) to control TDS in the Des Plaines River downstream of the I-55 Bridge and § 302.407 to control TDS in the Chicago Sanitary and Ship Canal and the Des Plaines River upstream of the I-55 Bridge. The need for this site specific rule arises due to the potential impact on the Des Plaines River and whether the increased level of TDS would “cause or contribute to a

² Note that Ammonia Nitrogen levels will not increase [even with the addition of the SCR technology to remove NOx from the gas stream], due to an additional aeration basin and clarifier in the wastewater treatment process and optimization of the sour water stripper to further remove ammonia nitrogen.

violation of a water quality standard” even though those exceedances are associated with snow melt conditions independent of TDS discharges from the refinery.

13. The refinery operates under a National Pollutant Discharge Elimination System (“NPDES”) permit (No. IL 0002861), issued by the Agency. A modification to the current NPDES permit was issued on September 12, 2001.³ The combined outfall for the refinery wastewater treatment plant is located at approximately 41°, 25’, 20” North Latitude and 88°, 11’, 20” West Longitude. ExxonMobil filed a timely NPDES renewal application on December 2, 2002. The current NPDES permit does not have effluent limits on TDS.

14. The refinery includes a physical/chemical and biological wastewater treatment plant. The treatment plant performs primary, secondary and tertiary treatment on the generated wastewater before it is discharged into the Des Plaines River. The original wastewater treatment plant, which began operation in 1972, included two pre-separator flumes for gross oil removal, two API separators for oil and total suspended solids removal, two dissolved air flotation units for further oil and total suspended solids removal, two activated sludge units that can be operated in both parallel and series, followed by the treated guard basin and aeration before discharge.

15. The refinery has made improvements to the wastewater treatment system, and has continued its efforts to reduce the concentration of ammonia nitrogen in its effluent. These upgrades have included the large equalization basin/biological aerated lagoon, (termed the EBTU), larger blowers on the activated sludge units, new internals in the secondary clarifier and many process changes in the refinery proper to reduce the pollutant loadings on the treatment system. Upstream improvements include installation of facilities to reduce oil carryover from

³ A copy of the modified permit is attached as Exhibit 4.

process units, implementation of a “No Oil to Sewer” program plantwide, and installation of access points in the sewer system to allow increased cleanouts.

16. Exhibit 5 is a diagram of the wastewater treatment plan as it presently exists. Further improvements to the existing wastewater treatment system or in the refinery proper to reduce pollutant loadings on the treatment system are planned; these improvements include an upgrade of the Sour Water Stripper for pH optimization in order to further reduce ammonia by over 50% to the wastewater treatment plant, installation of alternate piping to reroute FCC feed tank water draws from the wastewater treatment plant to the light slop system, increased flow monitoring in the wastewater treatment plant, and installation of new internals in the dissolved air floatation unit. Petitioner will expend approximately \$40,000,000 to meet the total suspended solids limitations, but requests relief from the water quality standard for total dissolved solids.

EXISTING WATER QUALITY

17. The refinery discharges into the Des Plaines River. Until the I-55 Bridge, the River is designated as Secondary Contact water; below the I-55 Bridge, the Des Plaines River is designated as General Use water. The General Use standard for TDS is 1,000 mg/L; 1,500 mg/L is the standard for Secondary Contact waters.

18. The requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability.

19. Water Quality Based Effluent Limits are based on low flow stream conditions (7-day, 10-year). Estimated values for stream low flows for the Des Plaines River at the I-55 Bridge, just downstream of the refinery is 970 MGD.

20. The peak recorded TDS result (1,194 mg/L) at the I-55 Bridge occurred on January 25, 2001, and was likely due to road deicing activities. The elevated TDS remained for two additional weeks, before returning below 1,000 mg/L. No other exceedances have been documented at the I-55 Bridge or downstream of the refinery discharge since 2001. Upstream of the refinery, in the Secondary Contact portion of the Des Plaines River, the maximum TDS level reported was 1,595 mg/L.

21. The recent sampling for TDS and sulfates, taken by both MWRDGC and the refinery are included in the Water Quality Impact Analysis, included in Exhibit 6.

22. To meet the requirements of the Consent Decree, Petitioner will install both DESOX technology and a WGS in the Fluid Catalytic Cracking Unit ("FCC") unit at the refinery to remove sulfur dioxide air emissions (Exhibit 3). The DESOX control complements the WGS and reduces SO₂ emissions by converting sulfur to a stable form and recovering it downstream. The sulfur thus recovered will not enter the wastewater stream, rather it is converted to elemental sulfur.

23. The WGS technology begins with the flue gas stream. The sulfur dioxide is ultimately converted to sodium sulfate salts which are contained in a purge stream. This purge stream will be cooled, the catalyst solids and ammonia nitrogen removed, and discharged upstream of the refinery Outfall 001 in the wastestream treatment system. Three alternative treatment processes for the catalyst fines and ammonia are under consideration by the refinery. None of these options will change the TDS or sulfates discharged, which are the subjects of this site specific rule request. The exit temperature will be limited to 90°F either by the specifications for the WGS purge system or the equivalent BTU's will be removed elsewhere in the refinery.

24. The particular design of the WGS is a proprietary technology and design for ExxonMobil. This WGS technology allows refineries to reliably meet stringent FCC emission requirements with well-proven technology. The WGS technology has the following advantages:

- Can avoid costly CO boiler upgrades with allowable scrubber pressure drops as low as zero inches of water;
- Maximizes cat cracker availability - scrubber run lengths match longest FCC up-time in the industry;
- Extremely high reliability [99.9%+] with over 200 years of operating experience;
- Meets or exceeds toughest particulate and SOx emission regulations;
- Produces environmentally benign wastewater safe for direct discharge;
- Collected catalyst suitable for direct low cost disposal; and
- Smallest commercially-proven FCC unit scrubber as it needs only 1/3 to 1/2 the area of competitive systems.

The following disadvantages can be expected from the attenuation of dry scrubbing technology:

- Dry scrubbing process cannot accomplish the desired SO₂ removal to comply with the Consent Decree; and
- Dry scrubbing processes cannot meet the run time consistent with an FCC Unit.

A more complete description of the WGS is included in Exhibit 3. While the DESOX technology complements the WGS and reduces the TDS loading to the sewer system, it is inadequate by itself to achieve the requirements of the Consent Decree.

PROJECTED IMPACT OF WET GAS SCRUBBER

25. The effluent from the purge treatment unit (PTU) will add an average of 133,000 lbs/day of TDS and 89,900 lbs/day sulfates.⁴ The resulting refinery combined outfalls [001, 002, and 003] will contain an average 1,050 mg/L of sulfates and 2,610 mg/L TDS.

26. At low flow conditions, the increased discharge from Petitioner, including the Citgo WGS discharge, will increase the sulfate and TDS levels in the waterways after complete mixing, by 29 mg/L for sulfate, and 43mg/L for TDS. (See Exhibit 5). At the confluence of the Des Plaines and Kankakee Rivers (the beginning of the Illinois River), approximately 5 miles downstream of the refinery, the TDS water quality standard of 1,000 mg/L will be achieved, even assuming low flow conditions and maximum TDS values from the State's monitoring program. Historical monitoring data on the Illinois River indicate TDS values are consistently below the water quality standard of 1,000 mg/L. The projected increase will maintain this status.

27. The projected sulfates and TDS would achieve the General Use water quality standards at the I-55 Bridge, except for TDS during times of snow melt run-off when the upstream TDS exceeds 957 mg/L. The TDS levels in the snow melt run-off are beyond the control of Petitioner.

THERE ARE NO REGULATORY CONSTRAINTS THAT PROHIBIT THIS RELIEF

28. There are no specific Illinois effluent limits on TDS. Therefore, to the extent there are water quality impacts, effluent limits would be based on Water Quality Based Effluent

⁴ Assumes all sodium salts.

Limits (“WQBELs”), factoring in antidegradation, Total Maximum Daily Limits (“TMDLs”), and mixing zones.

29. Water quality standards must be achieved at the edge of the mixing zone.

ExxonMobil completed a mixing zone determination in 1997, which determined the mixing zone provided a 21:1 dilution in the total discharge. That determination yields the following incremental change in water quality results:

	<u>Projected Increase in WQ at Edge of Mixing Zone</u>
Sulfate, mg/L	46
TDS, mg/L	91

Except when de-icing runoff causes TDS levels in the Des Plaines River upstream of the refinery discharge to approach the existing water quality standard, no water quality violations will occur. (See Exhibit 6).

30. Section 303(d) of the Clean Water Act requires states to identify impaired waterways and the causes of impairment and then develop what is essentially a waste load allocation for addressing the impairment. Illinois prepared its list of impaired waterways in 1998; 738 segments were identified. Illinois also developed a priority list for addressing these 738 segments. According to the Agency’s *Illinois Water Quality Report 2004*, the Illinois River is listed as impaired waterways, for a variety of reasons. However, none of the reasons listed are for sulfates or TDS.

31. U.S. EPA has promulgated categorical limits on various industries, including the petroleum refining industry. The Joliet Refinery’s WWTP effluent parameters meet or are well below all federal effluent guidelines and standards for the appropriate petroleum refinery point

source subcategory (40 C.F.R. 419, Subpart B - Cracking Subcategory). The flow rate used to derive the Best Available Technology (“BAT”) effluent values for a refinery the size and configuration is 5,200 gallons per minute (gpm), while the refinery’s actual current flow rate is 2,200 gpm, with a maximum hydraulic flow rate of 3,400 gpm. The refinery’s wastewater treatment system goes beyond BAT requirements. See, E.g., Mobil Oil Corporation v. Illinois Environmental Protection Agency, PCB 93-151, Opinion and Order at 4. (March 3, 1994).

32. Based on the foregoing, ExxonMobil submits that the relief here requested is not inconsistent with the effluent standards and areawide planning criteria under the Clean Water Act. Moreover, the Agency concurs that this relief is federally approvable. (See Exhibit 2).

OTHER FACTORS JUSTIFYING THE SITE-SPECIFIC STANDARD

33. The approach being pursued by ExxonMobil minimizes the overall environmental impact and costs associated with the Consent Decree. Moreover, applying the existing TDS standards in this situation is neither technically feasible or economically reasonable.

34. The Consent Decree, to which the Agency is a party, substantially reduces emissions of sulfur dioxide, nitrogen oxides and particulate matter. ExxonMobil agreed to these reductions and will be investing over \$180 million at the refinery, most of which costs are for the WGS which generates the TDS and sulfates identified above, and for the purge water treatment for thermal, total suspended solids and for ammonia oxidation. These investments are projected to reduce SO₂ emissions by over 24,000 tons/year, and NO_x emissions by over 1,800 tons/year.

35. The relative contribution from the refinery is readily within the assimilative capacity of the waterway, and there is no water quality violation for TDS in the Des Plaines River, except in association with snow melt conditions. The available information demonstrates

that this increased discharge will not adversely affect the River and that other approaches are either not feasible or would have other adverse environmental impacts.

36. The Agency has been investigating changes in water quality standards for sulfate and TDS. Investigations have occurred and are on-going. These investigations indicate that the existing TDS standard is unnecessary and that a higher numerical standard for sulfate would still be protective of water quality uses. The Agency has advised Petitioner that it intends to pursue a change in the TDS and sulfate water quality standards statewide in the near future. Under the Agency's draft proposal, TDS would be removed as a water quality parameter, and sulfate water quality standards would be increased to between 1,400 and 2,000 mg/L for the Des Plaines River. At these proposed standards, even during snow melt conditions, there would not be a water quality exceedance, as highway deicing involves chlorides, not sulfates. Petitioner's requested relief would not be necessary if the Agency's proposal is adopted.

37. There is not a need for TDS controls on Petitioner's wastewater discharges with respect to TDS. Indeed, the only potential violation of the existing standard for TDS is in association with snow melt conditions, a cause for which Petitioner clearly is not responsible. Indeed, the Agency has not listed the applicable Des Plaines River segment as impaired for TDS.

38. Petitioner has investigated methods of avoiding releasing the wastewater from the FCC to the existing wastewater treatment system, including deep well disposal and removal technologies. None of these are technically feasible.

39. The Agency has rejected the deep well disposal option because in its view this would constitute a Class I injection well. Class I injection wells are permissible only where there exists a cap rock to prevent the injected fluids from migrating upwards. In northeastern Illinois, no cap rock exists over the depth where disposal wells are drilled. This alternative is not viable.

40. Technologies for removing sodium sulfate from a dilute aqueous stream are limited. Electrodialysis has never been applied in the chemical or refinery industries on the scale required at the refinery. Biological sulfate reduction is theoretically possible, but this will not reduce the overall TDS concentration merely by replacing the sulfate ions with carbonate ions. The concentration of sodium sulfate is too high for reverse osmosis concentration, as the osmotic pressure of the solution is too high.

41. The sole technology potentially available is evaporation/crystallization, an energy intensive approach, which will result in increased carbon dioxide emissions to the atmosphere. Due to the lack of space available at the refinery, construction of a crystallizer/evaporator would require removal of existing tankage, site preparation activities, as well as the construction of a crystallizer unit sufficient to remove about 200 gpm of water, and handling of 90 tons per day of a dry sodium sulfate by-product (sulfate salt). Whether this by-product would be of sufficient purity to have any market value, and whether demand for the large amount of sulfate salt exists, has not been determined. The salt would possibly end up as a waste stream that required disposal. The equipment required for the evaporation/crystallization unit would include a sulfuric acid storage tank [6,000 gal capacity], metering pumps, a pH adjustment tank, a degasification tower, a 200 gpm crystallizer feed pump, a 24,000 gallon crystallizer feed surge tank, a crystallizer system, consisting of a tower, pumps, drums [10 ft diameter and 40 ft tall], a preheat exchanger, a condenser and various surge tanks, driers, and instrumentation controls and valves. The evaporation/crystallization technology would be also paired with pretreatment. The estimated cost of this size of the evaporation/crystallization system, including oxidation and solids removal, is \$36,000,000 to \$56,000,000.

42. Operating costs, including depreciation, are estimated to exceed \$1,000,000 per year, with 40% of this amount representing energy costs. The above cost estimate assumes the refinery has sufficient steam capacity, and that a new boiler would not be required. If it was determined that sufficient steam capacity did not exist, the refinery would need to increase boiler capacity or install another boiler, potentially increasing capital cost by \$3,000,000 to \$4,000,000 for the project. Moreover, Petitioner is not aware of a situation where the salt from the purge stream of refinery WGS has been precipitated to produce a solid salt. All applications of WGS utilizing circulating caustic soda solution for absorption and removal of SO₂ in the refining industry have been allowed to discharge the purge stream with their other wastewater. Therefore, assessments of precipitation performance reliability impacted by corrosion and fouling are uncertain. Further investigation would be warranted before such an approach was pursued.

43. Short-term episodic storage is neither technically feasible nor economically reasonable. The refinery has a relatively small footprint. All of the areas near the wastewater treatment plant are already fully occupied by existing tankage, and that tankage is expected to be fully utilized in the future, particularly in light of the energy needs of the region. The refinery would need to remove one or two currently utilized tankage limiting flexibility of operations and replace with a new 200,000 barrel storage tank, pumps, secondary containment, and associated piping. The cost estimate for this option is \$13,200,000.

44. Requiring Petitioner to install wastewater treatment for the scrubber TDS discharges into the wastewater system is not economically reasonable. Petitioner is not the cause of any water quality standard exceedance for TDS. Petitioner is investing substantial monies in the refinery to substantially reduce air emissions and to substantially reduce the overall

environmental releases from the refinery. The wastewater discharge involved is relatively modest and would not pose an adverse threat to the receiving stream.

45. The apparent cause of the exceedance in the Des Plaines River is the result of snow melt, carrying accumulated salts used for road deicing. Because of that phenomenon, which is beyond the control of Petitioner, the Agency has advised it would not grant the necessary construction permit without regulatory relief from the TDS water quality standard.

DIFFERENT FACTORS EXIST HERE THAN THOSE CONSIDERED BY THE BOARD IN ADOPTING THE EXISTING TOTAL DISSOLVED SOLIDS STANDARD

46. Several factors relating to the matter are substantially and significantly different from the factors relied on by the Board in adopting the TDS water quality standards cited here.

a) When the Board adopted the existing TDS [and sulfate] standard, it did so based on relatively limited data, and with clear caution in mind. The Board's rationale was to be protective of aquatic life. See, *In re Effluent Criteria, et al.*, Nos. R70-8, R71-14 and R71-20, Opinion and Order at pp.7-8 (March 7, 1972). Since that time, however, the Agency, U.S. EPA and other interests have investigated the water quality issues and have concluded that a substantially higher standard is warranted. These investigations indicate that the current TDS standard of 1,000 mg/L is not necessary to achieve the goal of protecting aquatic life. (See, e.g., Exhibit 7). The existing standard is based on a worst case combination of minerals being present. TDS becomes toxic where chloride is present in high concentrations, and where sulfate and sodium are not the primary anion and cation, respectively. This combination is not typically present in Illinois waters, including the Des Plaines River, where sulfate is the primary anion and sodium is the primary cation. Alternatively, by imposing a standard for chloride, as the Agency is presently considering, the danger of dissolved solids toxicity is addressed, thus making any TDS standard unnecessary. This information was clearly not available in 1972 when the TDS standard was adopted. (See also Exhibit 8, listing further new information since 1972).

b) In 1972, the air quality requirements applicable to sources such as the Joliet Refinery were also unknown and had not yet been adopted. The NSR regulations which triggered the Consent Decree here were not even a requirement under the Clean Air Act or the Illinois State Implementation Plan.

c) In 1972, the Joliet Refinery was just coming on line and was clearly not known as a source of discharge into the Des Plaines River. Nor was there information on the relative

contribution of snow melt run-off into waters of the State. The Board did not then consider the costs of treatment for TDS and certainly did not anticipate that removal of total dissolved solids would require the kind of massive investment and further increases in CO2 emissions that would be required to meet the existing standard.

For each and all of the preceding reasons, the situation relating to the Joliet Refinery is fundamentally different than those considered by the Board in adopting the TDS standards.

47. Moreover, the discharge from the Joliet Refinery that will occur, does not pose any threat to human health or the environment that is significantly greater than the environmental impact that the Board was trying to control when it adopted the TDS standards. The information compiled reflects a concern for the same impacts that were identified by the Board in 1972. But now there is better information on where to draw that line for the appropriate water quality standard.

48. Petitioner requests the Board expeditiously proceed to First Notice in this matter, and schedule a public hearing, and to proceed to consider this matter so that Petitioner can meet the schedule required by the Consent Decree.

CONCLUSION

49. This Petition satisfies the requirements of the Act, the factors relevant here demonstrate that requiring compliance with the existing TDS standards is neither technically feasible nor economically reasonable. Moreover, the situation here represents conditions which are substantially and significantly different from the factors relied on by the Board in adopting the TDS water quality regulation (see ¶ 46); those factors necessitate the relief here sought (see ¶¶ 25-27); the requested standard will not result in environmental and health effects more adverse than the effects considered by the Board (see ¶ 46); and the requested standard is consistent with applicable federal law (see ¶ 32).

WHEREFORE, Petitioner requests that the Board grant this site specific rule.

EXXONMOBIL OIL CORPORATION

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12023145v2

THIS FILING IS BEING SUBMITTED ON RECYCLED PAPER

CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that I have served upon the individuals named on the attached Notice of Filing true and correct copies of the Petition for Site Specific Rule Change Standard by First Class Mail, postage prepaid, on February 7, 2006


